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STATISTICAL BULLETIN
Metropolitan Life Insurance Co.

VOL. III. APRIL, 1922 No. 4

SMALLPOX RECORD OF AMERICAN AND CANADIAN CITIES IN 1921.

The facts on smallpox prevalence and fatality in American States and Canadian Provinces were shown in the March STATISTICAL BULLETIN. The 1921 record for the larger cities is now at hand, and shows even more convincingly how serious is the menace to the country from this disease.

In 93 cities having trustworthy records for 1920 and 1921, there was an increase during 1921, both in the prevalence and fatality rates. This group of cities reported 15,410 cases in 1921, an increase of 138 per cent. over the number recorded for 1920 (6,471). An increase in case-fatality accompanied this rising prevalence of cases—from 2 deaths per 1,000 cases in 1920 to 13 per 1,000 in 1921! The smallpox which caused the prevalence rate to more than double was severe enough to cause *six times* the number of deaths in proportion to cases! The experience of local areas is of interest in this connection. The Kansas City, Missouri, record seems to have been the most startling of any for American cities during the year. In 1921, 943 cases and 156 deaths were reported, or 165 deaths per 1,000 cases. This fatality rate is perhaps the highest experienced by any American city in recent years. It is typical of what may happen in any number of cities where anti-vaccination propaganda has nullified the efforts of sanitarians and the medical profession to secure adequate protection of the people through vaccination.

The Denver, Colorado, record is also instructive. In 1920 and 1919 no smallpox deaths were reported in connection with 1,676 cases in these two years. The 1921 cases show a sharp change in the severity of the disease. There were 46 deaths in 924 cases, or practically 50 deaths per 1,000 cases. This record, too, emphasizes the

wisdom of the warning repeatedly given the American people by the public health authorities. In Kansas City, Kansas, where no deaths occurred among a small number of cases in 1919 and 1920, 267 cases in 1921 resulted in 15 deaths, or at a rate of 56 deaths per 1,000 cases. New Orleans showed for the year 372 cases with 39 deaths, a case-fatality rate of eleven per cent. Smallpox has shown a high case-rate in this city for several years. In Okmulgee, Oklahoma, there were twelve deaths in fifty cases.

With vaccination protection at its present low ebb, cities can no longer feel secure against a sudden change in the character of the prevailing smallpox, nor against excessive prevalence of cases. Facilities for transportation provide ready means for the transmission of the disease in virulent form to any number of places where the population has grown indifferent or absolutely resistant to the reasonable requests of their health officials for vaccination. Must we have a nation-wide prevalence of virulent smallpox, with the accompanying inevitable loss of valuable lives and the disruption of commercial and industrial affairs, to teach the American population that the simple and safe procedure of vaccination is the only protection they can have against the disease?

DECLINING DEATH RATE AMONG NEGROES

A remarkable decline in the mortality of negroes has taken place in the last decade. This is clearly indicated by the experience of the Metropolitan Life Insurance Company, which has in excess of 1,600,000 premium-paying colored policy-holders in its Industrial Department. These policy-holders are located in virtually every state of the Union. In 1911, the mortality of colored policy-holders was 17.5 per 1,000. In 1921, the provisional death rate of these insured negroes had declined to 13.2 per 1,000, which represents a drop of 25 per cent. in this period. There would have been 7,000 more deaths of colored policy-holders than actually occurred in 1921, if the 1911 death rate had prevailed in that year.

This marked decline, on analysis, can be traced to improvements in the death rates from tuberculosis, pneumonia, heart disease, Bright's disease, malaria, typhoid fever, and pellagra. It is difficult to say just what forces have operated to bring about these changes. There are, obviously, a great many factors at work which are operating favorably on the life and health of our negro population. The last decade has seen a very encouraging development of health activi-

ties in the South and Southwest. At the same time, the economic status of negroes has risen, both during the war period and thereafter.

The improvement in the mortality of negroes is not localized. So far as the experience of the Metropolitan indicates, it represents a very broad movement affecting virtually all areas. Scarcely a state with a significant negro population but shows a decided decline in the death rate.

As late as 1916, there were 56 local areas where the Company's colored business showed mortality rates above 17.5 per 1,000. The record for 1921 shows only 15 such localities. In 1916, there were 30 centers with rates in excess of 19.0 per 1,000. In 1921, no such rate was experienced anywhere. It is noteworthy that the public health movement which has been so successful with reference to the white population is also making its impress upon the colored. The negro death rate, however, is still so high as to show glaring deficiencies in the health provisions for these people. The facts for the last ten years show clearly that the death rates of this race can readily be improved. There is all the more necessity for intensification of the services specially applicable to these people. In this connection, much is promised by the apparent desire of the insurance companies administered by negroes themselves to lead in the development of public health work and welfare services among their own people.

LARGE INCREASE IN RECENT MONTHS IN MORTALITY FROM ORGANIC DISEASES.

There have been marked increases in the death rates for heart disease, Bright's disease and apoplexy in recent months among the Industrial policy-holders of the Metropolitan Life Insurance Company. Small increases in the mortality from these diseases had been noticed early in November of last year. But the change attracted little attention and caused little comment. The possibility that it marked a definite check in the favorable tendency shown for several years for each of these diseases was not seriously considered. By December, however, the death rate had taken a more decided upward turn for each disease. Organic heart disease registered a rate of 124.9 as compared with 118.4 in November; the apoplexy rate rose from 62.6 to 70.6 and that for Bright's disease from 69.1 to 71.9. By January it had become apparent that for two of these diseases, at least, a definite upward tendency was in progress. The heart disease rate increased sharply from the December figure of 124.9, to 137.2, and that for chronic nephritis went up nearly three points over the

December figure. The apoplexy rate for this one month fell somewhat. In February, the heart disease figure rose even more sharply than for January (to 153.4), the nephritis rate again increased slightly (to 75.8), and that for apoplexy returned to approximately the December level. By March the rate for organic heart disease had reached 168.2 per 100,000, one of the highest figures ever recorded in any one month among Metropolitan Industrial policy-holders. The March rates for chronic nephritis (87.5) and for apoplexy (75.8) are both the highest registered for those diseases since March, 1920.

These are startling items in the recent public health situation which had been replete with favorable developments. The declining rates for these "degenerative" diseases were everywhere attracting attention. Subsequent to the great influenza pandemic the mortality from each dropped materially, even falling below the level of years prior to the pandemic. The rates of November last were the first indication of a serious change in the situation. Later, in January, February and March the high rates were obviously related in some degree to the influenza, which was very widely prevalent. But certainly the November and December figures were not so related. It is true that the increases in the heart disease, nephritis and apoplexy death rates were larger in January, February and March and that the presence of influenza was undoubtedly the *major* factor in these increases; but the evidence points to the probability that it was not the *sole* factor responsible for the large increases in the mortality from these organic conditions. This thought is also confirmed by the continuation of these high rates in recent weeks when there has been little influenza.

Developments of the rest of the year will be awaited with much interest. Will these higher death rates for organic heart disease, chronic nephritis and cerebral hemorrhage continue? Will the increase noted by the Metropolitan among the wage-earning group of the population of our cities be recorded also for the general population in the cities and in the rural districts? Have any age groups been affected to a greater extent than others? We have not as yet the data that must be obtained before these questions can be answered.

It is obvious that the situation with respect to these "degenerative" diseases, especially heart disease, is becoming more and more grave and that the very serious attention of health authorities to this subject is called for. Heart disease and its related organic disturbances are definitely taking the place of tuberculosis and the infections as leading items in the mortality of the population.

Death Rates per 100,000 Persons Exposed First Quarters of 1920, 1921 and 1922 Compared by Color for Principal Causes of Death. Industrial Department Metropolitan Life Insurance Company Premium Paying Business

Cause of Death	Death rates per 100,000 persons exposed					
	White			Colored		
	Jan.-Mar. 1922	Jan.-Mar. 1921	Jan.-Mar. 1920	Jan.-Mar. 1922	Jan.-Mar. 1921	Jan.-Mar. 1920
All Causes of Death	938.1	890.8	1313.4	1465.5	1375.3	1962.4
Typhoid fever	2.6	3.8	4.5	5.3	3.3	8.9
Measles	3.8	5.5	14.8	1.2	1.8	3.8
Scarlet fever	8.7	11.0	9.1	.5	3.6	....
Whooping cough	3.1	5.5	9.4	3.4	7.9	9.2
Diphtheria and croup	24.5	30.4	30.6	9.6	5.8	6.7
Influenza	41.2	12.3	163.4	81.1	28.5	227.9
Meningococcus meningitis	.8	4.0	5.7	.2	3.1	7.5
Tuberculosis—all forms	97.8	106.5	138.4	231.1	265.7	310.1
Tuberculosis of respiratory syst.	89.5	96.6	125.3	216.1	247.2	286.3
Tuberculosis of the meninges,etc.	3.7	5.2	6.4	4.1	5.6	4.8
Other forms of tuberculosis	4.7	4.7	6.7	10.8	13.0	18.9
Cerebral hemorrhage; apoplexy	67.6	63.3	70.3	99.4	90.8	96.2
Organic diseases of the heart	141.7	124.5	146.7	203.4	168.6	200.7
Total respiratory diseases	136.3	120.1	266.9	215.9	192.3	429.7
Bronchitis	8.2	7.1	14.7	13.2	13.2	19.4
Bronchopneumonia	43.4	37.0	77.0	51.3	48.3	90.2
Pneumonia—lobar and undefined	75.7	66.2	160.8	137.4	117.7	300.6
Other dis. of respiratory syst.	8.9	9.9	14.4	14.0	13.0	19.4
Diarrhea and enteritis	7.0	9.8	9.5	11.6	10.2	10.5
Under 2 years	2.8	3.3	4.2	2.9	1.8	4.0
2 years and over	4.2	6.5	5.3	8.7	8.4	6.5
Acute nephritis	5.9	5.5	6.6	15.4	18.3	23.2
Chronic nephritis	71.7	67.1	82.6	117.5	103.8	129.0
Total puerperal state	20.9	21.6	32.6	25.3	29.5	36.9
Puerperal septicemia	7.6	10.6	8.5	10.6	12.7	15.1
Puerperal albuminuria and convulsions	4.6	4.1	5.0	5.1	6.4	6.5
Other dis. of puerperal state	8.7	6.9	19.1	9.6	10.4	15.4
Total external causes*	57.0	57.3	60.6	86.4	96.4	88.6
Suicides	7.1	7.3	5.3	5.1	6.1	3.5
Homicides	3.7	3.3	2.9	25.3	27.2	18.3
Accidental and unspecified violence†	46.1	46.7	51.6	56.1	63.1	66.0
Accidental drowning	2.2	3.3	2.1	2.9	2.5	2.4
Automobile accidents	8.6	8.0	5.7	5.5	8.1	2.7
War deaths	.1	.1	.9	.....	.....	.8
All other and ill-defined causes of death	247.6	242.5	261.7	358.4	345.8	373.7

*Includes "War Deaths" †Excludes "War Deaths"

PUBLIC HEALTH DURING THE FIRST QUARTER OF 1922

The death rate for the first quarter of 1922 in the Industrial Department of the Company was higher among white policy-holders by 5.3 per cent. and among colored policy-holders by 6.6 per cent. than for the same quarter of 1921. This was due, very largely to the effects of epidemic influenza which prevailed during January and February.

There are, nevertheless, many favorable items in the figures for the quarter. The outstanding one is the continued low mortality from tuberculosis. Lower death rates are also in evidence for the four principal epidemic diseases of children, for typhoid fever (except for colored policy-holders), and for conditions incidental to the puerperal state.

The unfavorable developments, in addition to the much higher rates for influenza and pneumonia, are the increases for organic heart disease, cerebral hemorrhage and chronic nephritis. These increases are discussed on another page of this BULLETIN. A higher rate was also registered for automobile accidents.

The table on page 5 presents the death rates among white and colored policy-holders respectively for the first quarters of 1922, 1921 and 1920.

PROGRESS IN THE PREVENTION OF PUBLIC ACCIDENTS.

Highway and other accidents affecting the general public will be reduced in number if sufficient, accurate information can be collected on the circumstances surrounding such accidents. The rising toll of automobile accidents and fatalities, especially, calls for a united effort on the part of police and safety officials to secure the facts which will be helpful in suggesting ways and means for traffic regulation. Many problems in license restriction, traffic segregation and classification, and the mechanical improvement of safety appliances depend for further development upon data not now available to safety officers.

The National Safety Council proposes to meet this urgent need for accurate information by establishing a Registration Area for Public Accidents. Its Committee on Statistics has drawn up a set of uniform blanks and will shortly be able to offer cooperation in accident reporting to those cities whose police and safety officials wish to extract helpful lessons from a study of the public accidents occurring in their vicinities. Five forms have been drafted and approved by the Statistical Committee. Each form is in two parts: the first, a preliminary condensed form for the use of the police or

safety officer reporting the accident, and the second, a somewhat more detailed schedule for the use of court and headquarters clerks in abstracting the more complete statements obtained in court proceedings up to the final disposition of the case. This latter form is to be used in preparing statistics for local purposes, a carbon copy being sent to the National Safety Council for use in publishing comparative statistics for the cities in the Area.

The forms cover the following types of accidents: (1) Highway vehicular accidents, (2) Highway non-vehicular accidents, (3) General accidents, (4) Buildings and structures accidents, (5) Elevator accidents. Each form requires the statement of: general description of the accident, cause (fault of operator, mechanism, street condition, etc.), time of occurrence, weather conditions, persons injured and severity of injury, disposition, property damage and court proceedings in the case.

The preliminary plan is to offer electrotypes of the forms to cities whose officials wish to print the schedules locally. It may be possible later on to have the forms printed in large quantities by the Council and to sell them to cities at cost, thus securing a saving from large-scale production. The Committee on Statistics proposes to issue, at a later date, uniform table forms for the convenience of local officials in tabulating information for intensive safety work.

Police and safety officials who want to see their cities represented in this praiseworthy effort to prevent public accidents should write immediately to Mr. F. M. Rosseland, Chief, Public Safety Division, National Safety Council, 168 North Michigan Avenue, Chicago, Illinois.

Our exchanges, especially municipal and police journals, are respectfully requested to give publicity to this notice.

TYPHOID FEVER IN AMERICAN CITIES, 1921.

The annual survey of typhoid fever mortality in the larger cities of the United States during 1921, made by the *Journal of the American Medical Association*,* bears out the observations of health officers and the current findings among wage-earners insured in the Industrial Department of this Company, as reported in this BULLETIN as early as September, 1921. The year 1921 was marked by the first break in the downward trend of the typhoid fever death rate since 1913 in the large American cities.

The *Journal* observes editorially that there is no evidence that the slightly upward turn of the death rate in American cities was

*March 25, 1922, pp. 890-895.

due to relaxed vigilance on the part of health departments. The *Journal* cautiously concludes that the hot, dry weather during the summer of 1921 may have been an influence in the check administered to the fall in the death rate. This weather factor, the *Journal* says, may have been responsible for more bathing in polluted waters and for increased susceptibility to typhoid infection. The New York State Health Department months ago directed attention to the use of rural water supply sources of doubtful purity during the drought which accompanied diminished rainfall and the persistence of an excess of heat during the year.

HEALTH RECORD FOR MARCH, 1922

The March death rate of Metropolitan Industrial policy-holders was 11.6 per thousand. This marks an increase of 14.9 per cent. over the figure for February (10.1); it is 10.5 per cent. higher than the rate for March, 1921 (10.5), but is very much below the record for March, 1920 (15.5). There were 13,421 deaths as compared with 10,518 in February. The most important increase was that for influenza, which caused 819 deaths in March with a rate of 70.6 per 100,000, as compared with 480 deaths and a rate of 46.1 in February. As happened at the time of the more severe influenza epidemics of 1918-1919 and of the winter of 1920, the one just past was accompanied by very considerable increases in the mortality from pneumonia and from all of the more important causes of death. The pneumonia rate rose from 133.4 in February to 158.7 in March, and that for tuberculosis from 108.7 to 125.5. The heart disease figure for February was 153.4 which is considerably below the 168.2 recorded for March. The rate for chronic nephritis rose from 75.8 to 87.5. Smaller increases were registered for cancer and cerebral hemorrhage.

There were several rather pronounced changes of the death rates in March among the diseases of epidemiological interest. The figure for measles rose from 2.5 in February to 5.1; the whooping cough rate increased from 2.9 to 3.8, and that for typhoid fever from 1.9 to 3.0. Diphtheria and scarlet fever (the latter particularly), on the other hand, registered declines. The suicide rate rose from 6.3 in February to 7.3 in March. There was a rise of three points in the figure for accidental causes, and of one point, or 13½ per cent., in that for automobile fatalities. The homicide rate increased 26 per cent. Comparisons of some of these figures with March of last year are interesting. They show much lower rates this year for scarlet fever and diphtheria. The tendency with reference to these diseases has been very favorable

in recent months. While the death rate is still far too high for these "preventable" conditions, the decided downward trend that is now in evidence gives hope of definite and perhaps lasting improvement. The tuberculosis rate, despite the increase over the February figure, is still well below the record of March, 1921. It is, as a matter of fact, the lowest ever recorded for tuberculosis in March among Metropolitan Industrial policy-holders. The figure for whooping cough is only a little more than one-half that recorded for March a year ago.

The death rate for the large cities of the country was 16.4 per 1,000 estimated population during March; this is the same as the figure for February, but is 2.6 points higher than that for March of 1921.

Reports indicated that there was less smallpox, scarlet fever and diphtheria in March, but that pneumonia, measles and influenza increased.

Unfavorable smallpox developments were noted in Texas, North Carolina, Washington, Illinois and Minnesota. Connecticut experienced the most extensive smallpox outbreak of recent years, 247 cases having been reported up to March 20th. The disease appeared in Monroe, Bethel and Danbury, and to a lesser extent in Bridgeport, Norwalk, Fairfield, Milford, Stratford, Wallingford and Westport. There were two deaths. A smallpox survey recently completed in Williamson County, Illinois, brought to light a large number of cases that had never been reported. In Mason County, Illinois, more than 500 children were examined and more than 300 vaccinated. On account of an outbreak at Mobile, Alabama, the Mississippi State Board of Health ordered all those in the state who had visited a carnival at Mobile to be vaccinated. In Michigan an outbreak of hemorrhagic smallpox occurred in which there were eight deaths out of 28 cases. Twenty-three of the cases and six of the deaths occurred in Muskegon. Smallpox has been more or less prevalent in Alpena, Genesee, Huron, Mackinac, Oakland, Osceola, Saginaw, Sanilac, St. Clair, St. Joseph and Wayne Counties.

The most influenza was reported from New York, California, Louisiana, Texas and Illinois. The epidemic in New York City was declared ended early in the month. In Ogdensburg, New York, it was estimated that twenty per cent. of the population suffered from the disease. In the village of Bivalve, Maryland, it is reported that not a single family escaped without one or more cases. A seminary at Easthampton, Mass. was closed on account of the development of

forty cases of influenza among the students. A mild epidemic occurred in Atlanta, Georgia.

Measles has been very prevalent in New York, Massachusetts, New Jersey, Maryland and Connecticut. In Detroit, Mich., more cases of measles have been reported during the first quarter of 1922 than during the entire year of 1921

There have been several scarlet fever outbreaks during the month. The public schools of Girardville, Pennsylvania, were closed for a week. The schools of Westmount in the same state were also closed for a considerable period.

Diphtheria was most prevalent in New York, Illinois, Massachusetts, New Jersey and California. The cities of Auburn, Schenectady, and Syracuse have been selected for a systematic trial of new methods for combating diphtheria. It is to be conducted by the New York State Health Department in cooperation with the local health and school officials, the American Red Cross and other civic agencies.

Poliomyelitis cases have been reported to a considerable extent from California, New York and Illinois. In the Illinois counties of Logan, Whiteside, Scott, Livingston, Lee, Marion, Coles and Sangamon, the disease has been more or less epidemic since 1916, at times reaching alarming proportions. Cases of lethargic encephalitis have been reported from Massachusetts, Connecticut, California, New York, Wisconsin and Illinois. In Worcester, Mass., 6 cases were reported within fifteen days, and the Board of Health is planning to have the patients removed to an institution where they can be watched to determine methods of treatment. An outbreak of rabies attributed to infected coyotes was reported in the eastern section of Washington. Connecticut has recently been threatened with an epidemic of this disease and dog quarantines were made effective in 25 towns. Cases of leprosy were discovered in Newark and Cleveland; a case was also reported from the State of Missouri.

The table below displays the mortality among Industrial policyholders for March 1922, February, 1922, for March 1921 and for the year 1921.

METROPOLITAN LIFE INSURANCE COMPANY.

Death Rates per 100,000 for Principal Causes, Premium-paying Business in Industrial Department.

(Annual Basis)

MONTHS OF FEBRUARY AND MARCH, 1922 AND OF MARCH, 1921.

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED			
	Mar., 1922	Feb., 1922	Mar., 1921	Year 1921*
TOTAL—ALL CAUSES	1157.5	1010.7	1046.9	853.8
Typhoid fever	3.0	1.9	3.1	6.6
Measles	5.1	2.5	5.9	3.1
Scarlet fever	6.6	9.0	9.5	6.9
Whooping cough	3.8	2.9	6.2	3.9
Diphtheria	19.1	21.9	24.4	23.3
Influenza	70.6	46.1	17.1	8.6
Tuberculosis (all forms)	125.5	108.7	133.9	115.1
Tuberculosis of resp'y system	116.3	100.4	123.2	103.6
Cancer	76.1	72.5	73.0	70.4
Cerebral hemorrhage	75.8	69.1	68.1	60.9
Organic diseases of heart	168.2	153.4	139.9	115.0
Pneumonia (all forms)	158.7	133.4	120.9	66.5
Other respiratory diseases	22.9	20.9	17.8	14.1
Diarrhea and enteritis	7.2	6.3	8.8	13.9
Bright's disease (chronic nephritis)	87.5	75.8	74.2	66.7
Puerperal state	22.5	21.6	24.3	19.5
Suicides	7.3	6.3	6.1	7.5
Homicides	5.8	4.6	4.9	6.6
Other external causes (excluding suicides and homicides)	49.7	46.7	44.7	56.2
Traumatism by automobile	8.4	7.4	7.4	11.9
All other causes	242.1	207.0	232.1	189.0

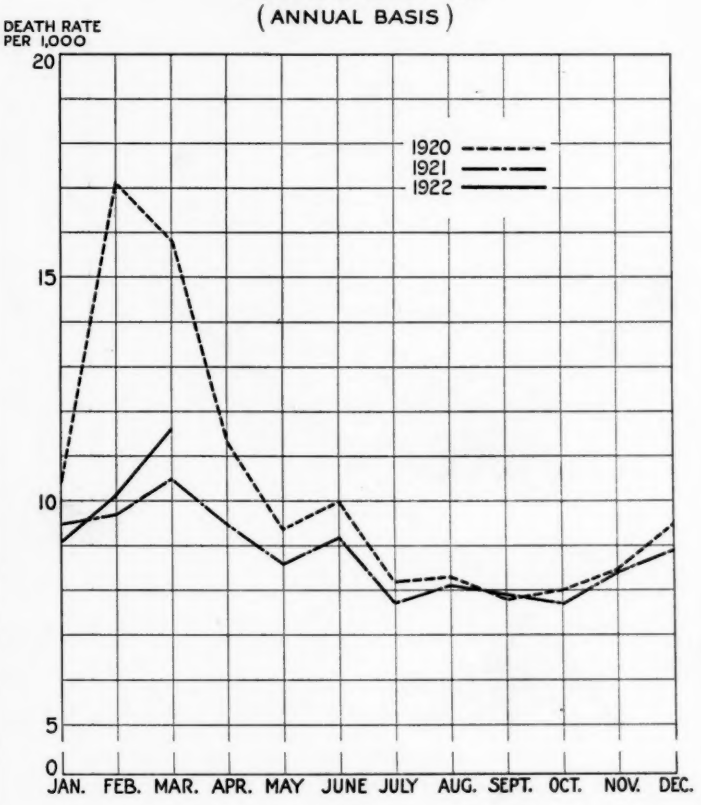
*Based on provisional estimate of lives exposed to risk in 1921.

Correspondence on the subjects discussed in these BULLETINS may be addressed to the Editor:

STATISTICAL BULLETIN,
Metropolitan Life Insurance Company,
1 Madison Avenue, New York City

DEATHRATE *per* 1,000 IN SPECIFIED MONTHS OF 1920, 1921, 1922

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT
(ANNUAL BASIS)



	1920	1921	1922
JAN.	10.4	9.5	9.1
FEB.	17.1	9.7	10.1
MAR.	15.8	10.5	11.6
APR.	11.3	9.5	
MAY	9.4	8.6	
JUNE	10.0	9.2	

	1920	1921	1922
JULY	8.2	7.7	
AUG.	8.3	8.1	
SEPT.	7.8	7.9	
OCT.	8.0	7.7	
NOV.	8.5	8.4	
DEC.	9.5	8.9	

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